REMARKS

Entry of this Amendment if proper because it narrows the issues on appeal and does not require further search by the Examiner.

Claims 1-39 are all the claims presently pending in the application. Claims 1-3, 5, 14, 22-23, 27 and 31-38 have been amended to more particularly define the invention. Attached hereto is a marked-up version of the changes made to the claims by the current Amendment.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Applicant gratefully acknowledges that claims 14-19 and 23-26 would be allowable if rewritten in independent form. Applicant notes that independent claims 14 and 23 have been rewritten and, therefore, all of these claims are in condition for allowance.

Claim 38 stands rejected upon informalities (e.g., 35 U.S.C. § 112, second paragraph) Claims 1-2, 6, 8-13, 20-21, 29, 32, 34 and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al. in view of Brackett et al. (U.S. Patent No. 5,550,818) (hereinafter the "Brackett Patent") and C. Brackett, "Dense Division Multiplexing Networks: Principles and Applications", IEEE Journal on Selected Areas in Communications, Vol. 8, No. 6, August 1990)(hereinafter the "Brackett Article"). Claims 3-4 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al., the Brackett Article and the Brackett Patent as applied to claims 1-2, 6, 8-13,20-21, 29, 32, 34 and 36 above, and further in view of Solgaard et al. (U.S. Patent No. 6,097,859).

Claims 5, 22 and 27-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al., the Brackett Article and the Brackett Patent as applied to claims 1-2, 6, 8-13, 20-21, 29, 32, 34 and 36 above, and further in view of Domash (U.S. Patent No. 5,937,115). Claims 30 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al., the Bracket Article and the Brackett Patent as applied to claims 1-2, 6, 8-13, 20-21, 29, 32, 34 and 36 above, and further in view of Crowcroft. Claims 31, 33, 35 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al. in view of the Brackett

Patent, the Brackett Article and Stallings.

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

The claimed invention is directed to an optical switch (and method) for a network having a plurality of nodes. The inventive optical switch includes a switch coupled to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link. The switch includes a light beam steering mechanism for directing said traffic.

The optical switch further includes a controller, coupled to the switch, for controlling the operation of the switch by implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number. The controller controls the switch to direct the various wavelengths of traffic from an input link to an appropriate output link as determined by the routing protocol and the labeling protocol.

Conventional systems include label switching routers (LSRs) having a router/switch controller (RSC) and a label swapping switch (e.g., an asynchronous transfer mode (ATM switch). The RSC exchanges Internet Protocol (IP) routing information with other routers via standard routing protocols and forwards IP packets based on the acquired routing information. The RSC also controls the label swapping switch. However, such routers require an extra packet header on the data packet for the label which necessitates electronics in the data path in order to route data packets, resulting in an "electronic bottleneck".

The claimed optical switch, on the other hand, includes a controller coupled to the switch, for controlling the operation of the switch by implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number. Unlike an LSR, the inventive optical switch uses optical technology to route the different wavelengths in different directions. Therefore, unlike conventional LSRs, the claimed optical switch does not require an extra packet header (i.e., does not include an explicit label in the packet that needs to be processed). Therefore, the claimed optical switch

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eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional routers such as LSRs.

II. THE PRIOR ART REFERENCES

A. The Xu, Brackett Patent and Brackett Article References

The Examiner alleges that Xu would have been combined with the Brackett Patent and Brackett Article to form the claimed invention. However, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

First, Applicant notes that claim 1 recites *"a light beam steering mechanism for directing said traffic"* and *"exchanging routing information with other nodes"*, features which the Examiner concedes are not disclosed by Xu, the Brackett Patent and the Brackett Article, but which the Examiner alleges are disclosed by Domash and Stallings, respectively. Applicant respectfully submits that such a combination (e.g., a combination of no less than 5 references) clearly cannot be made without relying on impermissible hindsight, and, therefore, the Examiner failed to make a prima facie case of obviousness.

Xu discloses a layered-graph-based routing and assignment of wavelength (RAW) algorithm for dynamic routing and assignment of wavelength in WDM networks (Xu at Abstract).

The Brackett Patent discloses a system for the wavelength division multiplexing/ asynchronous transfer mode (WDM/ATM) operation of high-capacity optical communication networks. The system incorporates an optical fiber communication network ring, or several optical fiber communication network rings that are connected to each other, through which data signals are transmitted and received (Brackett Patent at Abstract).

The Brackett Article discloses multiwavelength networks, some of the limitations which affect the performance of such networks, and presents examples of several network and switching proposals (Brackett Article at Abstract).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different problems. Specifically, Xu is intended to provide a shortest path algorithm which is less complex than

standard shortest path algorithms, whereas the Brackett Patent is directed to the use of wavelength division multiplexing in asynchronous transfer mode (ATM) networks, and the Brackett Article is directed to dense wavelength division multiplexing networks. In other words, Xu is completely unrelated to the other references. Therefore, no person of ordinary skill in the art would have considered combining these references.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. For example, the Examiner supports the combination by merely stating that it would have been obvious to combine the references "for computing the routes, assigning wavelengths to the routes, updating the routing table and manipulating the optical switch accordingly" which is merely a conclusory statement and insufficient to support the combination.

Moreover, none of these references teach or suggest an optical switch having a controller which controls a switch by *"implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number"* as recited in claim 1. As noted above, conventional label switching routers (LSRs) having a router/switch controller (RSC) and a label swapping switch (e.g., an asynchronous transfer mode (ATM switch) (Application at page 7, line 19-page 8, line 6). The RSC exchanges Internet Protocol (IP) routing information with other routers via standard routing protocols and forwards IP packets based on the acquired routing information. The RSC also controls the label swapping switch. However, such routers require an extra packet header on the data packet for the label which necessitates electronics in the data path in order to route data packets, resulting in an "electronic bottleneck" (Application at page 10, lines 15-18).

The claimed optical switch, on the other hand, implements a routing protocol and exchanges routing information with other nodes, and implements a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number (Application at page 18, line 17-page 19, line 4). Unlike an LSR, the inventive optical switch routes traffic using optical technology to route different wavelengths in different directions. Therefore, unlike conventional LSRs, the claimed optical switch does not require an extra header on a data packet (i.e., does not include an explicit label in the

packet that needs to be processed). Therefore, the claimed optical switch eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional IP routing systems. (Application at page 4, lines 4-7).

Clearly, the references do not teach or suggest these novel features. Indeed, as noted above, Xu merely discloses a layered-graph-based routing and assignment of wavelength (RAW) algorithm for dynamic routing and assignment of wavelength in WDM networks. Specifically, Xu discloses a node having an optical switch which is dynamically configurable (Xu at page 332) and multiple fibers between node pairs (Xu at page 332). However, Xu does not disclose a controller for controlling a switch in the optical switch, and Xu certainly does not disclose a controller which controls a switch by implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label (e.g., a label including at least one of a wavelength and a fiber number) with a destination.

More specifically, Applicant submits that the routing and labeling of the claimed invention is very different from the routing and labeling in Xu et al. In the claimed invention, the term "labeling" may be used to refer to the use of a label distribution protocol or LDP, such as used in ARIS, tag switching and MPLS, in which adjacent nodes exchange labels that they agree to use for certain destinations that are learned in a routing protocol that determines nexthops for various destinations.

Further, the examiner states that Xu et al suggest the use of a shortest path algorithm such as the Dijkstra algorithm to find routes. The examiner says "It is well known that the Dijkstra algorithm generates a spanning tree from the network with the destination as the root".

The Applicant notes that, in fact, the Dijkstra algorithm finds the shortest paths from a single, source vertex. See, for example, the following reference from the National Institute for Standards and Technology, http://www.nist.gov/dads/HTML/dijkstraalgo.html which defines Dijkstra's algorithm as "[a]n algorithm to find the shortest paths from a single source vertex to all other vertices in a weighted, directed graph. All weights must be nonnegative. Implementing the priority queue with a Fibonnaci heap makes the time complexity O(E + V log V), where V is the number of vertices and E is the number of edges".

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In other words, Dijkstra builds a tree from a source (not the destination) as the root. The claimed invention, on the other hand, involves a tree that is formed from a destination (not a source) and then addresses how a switched path tree is built back to the sources from each egress. The claimed invention may also involve using the switched path to an egress for all of the destinations that are behind that said egress.

The examiner also states that Xu et al can use more than one wavelength. But Xu et al does not use a Label Distribution Protocol (e.g., as in ARIS, tag switching & MPLS) and does not use a single wavelength as an MPLS label that is passed upwards from an egress. Neither does Xu use "shades" of a given wavelength to simplify the separation and the steering of wavelengths by minimizing the number of colors that need to be distinguished and switched.

The Examiner also states that Xu et al disclose multiple fibers in a cable (bundle) and that "it is obvious that, without wavelength conversion, channels of same wavelength from different sources routed to the same output cable are carried on different fibers in a bundle." However, as noted above, Xu et al doesn't talk about the use of multiple fibers in connection with the use of an optical IP switch that combines IP routing protocols, a label distribution protocol (e.g., such as ARIS, tag switching or MPLS) and an optical switch in an innovative design that allows IP routers to switch traffic at the speed of light.

Further, the Brackett Patent does not teach or suggest the claimed invention. The Examiner relies on col. 9, lines 32-51 to support his allegations. However, this passage merely refers to Figure 1 and a local node controller 7 which implements reconfiguration data from a network controller 8 and controls a corresponding WDM cross-connect module 4a-4e (Brackett Patent at col. 9, lines 57-63). However, nowhere in this passage does the Brackett Patent disclose a controller which implements a routing protocol and exchanges routing information with other nodes, and implements a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number.

Likewise, the Brackett Article does not disclose the claimed invention. For example, Figure 3 in the Brackett Article may show a route table with wavelengths. However, the Brackett Article doesn't involve a routing protocol (e.g., such as OSPF, RIP or IGRP) or a label distribution protocol (LDP) (e.g., such as is used in ARIS, tag switching or MPLS). Therefore, the Brackett Article discloses a system which is clearly different and unrelated to

the claimed invention.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Solgaard Reference

Regarding claims 3, 4 and 7, the Examiner alleges that Solgaard would have been combined with Xu, the Brackett Article and the Brackett Patent to form the claim invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Solgaard discloses a cross-connect switch for fiber-optic communication networks. The switch includes a wavelength dispersive element, such as a grating, and a stack of regular (non-wavelength selective) cross bar switches using two-dimensional arrays of micro-machined, electrically actuated, individually-tiltable, controlled deflection micro-mirrors for providing multiport switching capability for a plurality of wavelengths (Solgaard at Abstract).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different problems. Specifically, Solgaard is intended to provide a fiber-optic switch using two arrays of actuated mirrors to switch or rearrange signals from N input fibers onto N output fibers, where N can be larger than 2 (Solgaard at col. 1, lines 63-67), which is completely unrelated to the problems addressed by Xu, the Brackett Article, and the Brackett Patent. Certainly, no person of ordinary skill in the art would have considered combining these references.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, the Examiner supports the combination by merely stating that it would have been obvious to combine these references "because MEMS technology is capable of building large cross-connects" which is insufficient to support the combination.

Moreover, Solgaard, like Xu, the Brackett Article, and the Brackett Patent, does not teach or suggest an optical switch having a controller which controls a switch by *"implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number"* as recited in claim 1. As noted above, unlike conventional label switching routers (LSRs) having a router/switch controller (RSC) and a label swapping switch (e.g., an asynchronous transfer mode (ATM switch), the claimed optical switch has a controller which implements a routing protocol and exchanges routing information with other nodes, and implements a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number (Application at page 18, line 17-page 19, line 4).

Specifically, unlike an LSR, the inventive optical switch uses optical technology to route the different wavelengths in different directions. Therefore, unlike conventional LSRs, the claimed optical switch does not require an extra packet header with an explicit label that needs to be processed. Therefore, the claimed optical switch eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional routers such as LSRs (Application at page 4, lines 4-7).

Clearly, Solgaard does not teach or suggest these novel features. Indeed, Solgaard merely teaches a micromirror array 74 which is a one-dimensional array with one mirror per wavelength (Solgaard at col. 9, lines 21-22). However, Solgaard states that the mirror would have two states, sending a corresponding wavelength to an output fiber, or tilted to send a wavelength to the detector 76 (Solgaard at col. 9, lines 22-26). Moreover, Solgaard does not disclose a controller for controlling a switch (e.g., controlling the micromirror array 74).

In other words, Solgaard does not disclose a controller coupled to a switch, let alone a controller which controls the switch by implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this

rejection.

C. **The Domash Reference**

Regarding claims 5, 22 and 27-28, the Examiner alleges that Domash would have been combined with Xu, the Brackett Article and the Brackett Patent to form the claimed invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Domash discloses optical components or nodes which are formed utilizing holographically polymerized polymer/liquid crystal composites. In a preferred embodiment, guided wave optical paths, and in particular waveguides, are utilized for node interconnects, with various techniques being presented for forming nodes and/or structures as integrated optical structures (Domash at Abstract).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different matters. Specifically, Domash is directed to an electronically switchable Bragg Grating element and electrodes for selectively applying an electric field across the element (Domash at col. 3, lines 40-45) which is completely unrelated to the problems of Xu, the Brackett Article and the Brackett Patent. Certainly, no person of ordinary skill in the art would have considered combining these references.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, the Examiner supports the combination by merely stating that it would have been obvious to combine the references "to use light steering optical switch, as taught by Domash, in the switching system of Xu et al., Brackett and Patent '818" which is insufficient to support the combination.

Moreover, Domash, like the other cited references, does not teach or suggest an optical switch having a controller which controls a switch by *"implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number"* as recited in claim 1. As noted above, unlike conventional

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routers such as label switching routers (LSRs), the inventive optical switch routes traffic by using optical technology to route the different wavelengths in different directions. Therefore, unlike conventional LSRs, the claimed optical switch does not require an extra packet header (i.e., does not include an explicit label in the packet that needs to be processed). Therefore, the claimed optical switch eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional routers such as LSRs. (Application at page 4, lines 4-7).

Clearly, Domash does not teach or suggest these novel features. Indeed, Domash merely teaches a design for a Bragg grating element (Domash at Figure 1). Domash is completely unconcerned with a controller for controlling a switch. Specifically, referring to Figure 4, Domash merely states that "signals from a suitable control applied across the leads 24 producing a desired electric field across the ESBG" (Domash at col. 9, lines 49-51).

In other words, Domash does not disclose a controller coupled to a switch, let alone a a controller which implements a routing protocol and exchanges routing information with other nodes, and implements a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number. Therefore, Domash does not make up for the deficiencies of Xu, the Brackett Article and the Brackett Patent.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

D. The Crowcroft Reference

The Examiner alleges that Crowcroft would have been combined with Xu and Brackett to form the claimed invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Crowcroft discloses an Internet protocol based on network edge packet sorting and scheduling (Crowcroft at Abstract).

However, Applicant submits that these references would not have been combined as

alleged by the Examiner. Indeed, these references are directed to different matters. Specifically, Crowcroft is directed to enabling direct Internet protocol routing over photonic switching which is completely unrelated to the problems of Xu, the Brackett Article and the Brackett Patent. Certainly, no person of ordinary skill in the art would have considered combining these references.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, the Examiner supports the combination by merely stating that it would have been obvious to combine the references "to carry data packets, as taught by Crowcroft, because WDM can provide the bandwidth required by the IP traffic growth" which is insufficient to support the combination.

Moreover, Crowcroft, like the other cited references, does not teach or suggest an optical switch having a controller which controls a switch by *"implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number"* as recited in claim 1. As noted above, the novel features of the claimed optical switch allow it to avoid the requirement of an extra packet header (i.e., does not include an explicit label in the packet that needs to be processed). Therefore, the claimed optical switch eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional routers such as LSRs. (Application at page 4, lines 4-7).

Clearly, Crowcroft does not teach or suggest these novel features. The Examiner relies on Section 1 of the Crowcroft reference. However, this passage merely introduces the article and states that "the Internet has traffic pattern that exhibit poor locality of reference, and therefore requires continued support for arbitrary routes without classical telecom network hierarchy".

Further, in Section 4, Crowcraft may disclose using MPLS and LDP to "distribute mapping between wavelength and destination set". However, nowhere does Crowcroft teach or suggest the claimed optical switch which includes a controller which implements a routing protocol and exchanges routing information with other nodes, and implements a labeling protocol that associates a label with a destination, the label including at least one of a

wavelength and a fiber number. Therefore, Crowcroft does not make up for the deficiencies of Xu, the Brackett Article and the Brackett Patent.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

E. The Stallings Reference

The Examiner alleges that Stallings would have been combined with Xu, Brackett, and C. Brackett to form the claimed invention. Applicant submits, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Stallings discloses link-state routing in which, when a router is initialized, it determines the link cost on each of its network interfaces. The router then advertises this set of link costs to all other routers in the Internet topology. From then on, the router monitors its link costs. When there is a significant change, the router again advertises its set of link costs (Stallings at p. 415).

However, Applicant submits that these references would not have been combined as alleged by the Examiner. Indeed, these references are directed to different problems. Specifically, Stallings is directed to link-state routing which is completely unrelated to the problems of Xu, the Brackett Article and the Brackett Patent. Certainly, no person of ordinary skill in the art would have considered combining these references.

Further, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, the Examiner supports the combination by merely stating that it would have been obvious to combine the references "to use the controller to exchange routing information with other nodes" which is insufficient to support the combination.

Moreover, Stallings, like the other cited references, does not teach or suggest an optical switch having a controller which controls a switch by *"implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling*

protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number" as recited in claim 1. As noted above, the novel features of the claimed optical switch allow it to avoid the requirement of an extra packet header (i.e., does not include an explicit label in the packet that needs to be processed). Therefore, the claimed optical switch eliminates the need for electronics in the data path and, thus, eliminates the "electronic bottleneck" present in conventional routers such as LSRs (Application at page 4, lines 4-7).

Clearly, Stallings does not teach or suggest these novel features. The Examiner states that Stallings "teaches that link-state protocol such as OSPF can be used for calculating the shortest path". Applicant respectfully submits that this may be true, but this clearly does teach or suggest the claimed optical switch which has a controller for controlling a switch by implementing a routing protocol and exchanging routing information with other nodes, and implementing a labeling protocol that associates a label with a destination, the label including at least one of a wavelength and a fiber number.

Indeed, Applicant notes that the open shortest path first (OSPF) protocol was described in the Application as a standard routing protocol which may be used by a router/switch controller (RSC) in a label switch router (LSR) to exchange IP routing information with other routers (Application at page 7, line 19-page 8, line 3). In other words, the Application recognizes the methods disclosed in Stallings, and states that "in contrast to the LSR which uses ATM Vcs, the Optical IP switch uses wavelengths (e.g., different destinations in the route table will be associated with different "colors" (wavelengths)) of light" (Application at page 11, lines 6-8).

In other words, Stallings does not teach or suggest the novel features of the claimed invention. Therefore, Stallings does not make up for the deficiencies of Xu, the Brackett Article and the Brackett Patent.

Therefore, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

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IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-39, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: 1/29/03

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Response was filed by facsimile with the United States Patent and Trademark Office, Examiner Shi Li, Group Art Unit # 2633 at fax number (703) 872-9314 this 29th day of January, 2003.

Phillip E. Miller
Reg. No. 46,060

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